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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,613	09/30/2003	Mukund Raghavachari	YOR920030229	4202
34663 7590 03/21/2011 MICHAEL J. BUCHENHORNER 8540 S.W. 83 STREET MIAMI, FL 33143				
EXAMINER				
KARIKARI, KWASI				
ART UNIT		PAPER NUMBER		
2617				
NOTIFICATION DATE		DELIVERY MODE		
03/21/2011		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary**Application No.**

10/674,613

Applicant(s)

RAGHAVACHARI, MUKUND

Examiner

KWASI KARIKARI

Art Unit

2617

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-6, 9-12 and 14-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-6, 9-12 and 14-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-945)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 01/04/2011 with respect to the rejection(s) of claim(s) 1,4-6, 9-12 and 14-26 have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made as shown below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1,4,6,9-12 and 15-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knauerhase et al., (U.S. 2004/0203998), (hereinafter, Knauerhase) in view of Shoaib et. al., (U.S. 2003/0193910), (hereinafter, Shoaib)

Regarding claims 1 and 18, Knauerhase discloses an information handling system/program (= service connectivity anticipation system/method, see [0003, 0014, 0017, 0022 and 0025]) comprising:

a wireless unit configured for moving within a network (= location and direction of travel of mobile device, see [0018-19, 0026 and 0037]), said wireless unit comprising:

a location determining mechanism (= determine location of mobile device via GPS and any known method, see [0021 and 0036]);

a transceiver; and an input/output interface (see [0029, 0039 and 0042]);

a wireless access point for facilitating contact between the wireless unit and the network (= access point, see [0024]);

logic for determining: a target position for improved communication (=optimal connection, see [0017, 0027 and 0031]) for the wireless unit based in part on information representing a recent position of the wireless unit (= first/current location and second location/traveling direction, see [0021-22 and 0025]); a transmitter for transmitting directions to a user of the wireless unit to be presented on the input/output interface, the directions including information directing the user of the wireless unit to move the wireless unit to the target position for improved reception (= mobile device warns/informs the user of potential change in service, see [0027, 0031, 0033 and 0040]) wherein changing a position of the wireless unit from the recent position to the target position is more likely to result in improved reception and transmission of wireless signals to and from the wireless access point (see [0020, 0024, 0030-31 and 0038]; and

a database for storing information relating to position and related data on wireless reception quality (see [0033, 0036 and 0040]).

Knauerhase explicitly fails to disclose the claimed limitations: "historical data on received signal strength at the recent and target positions"; and "wherein the information stored based on historical data on received signal strength at the recent and target positions is enhanced by information on an environment of the recent and target positions."

However, **Shoaib**, which is an analogous art, equivalently teaches: "historical data on received signal strength at the recent and target positions"; and "wherein the information stored based on historical data on received signal strength at the recent and target positions is enhanced by information on an environment of the recent and target positions" (see [0071-73]).

Therefore, it would have been obvious at the time the invention was made for one of the ordinary skill in the art to have combined the teaching of Shoaib with Knauerhase for the benefit of achieving communication system that uses advance network information to determine handover operation thereby, providing a faster and seamless switching between heterogeneous networks.

Regarding claim 4, as recited in claim 1, **Knauerhase** further discloses the system, wherein the logic for determining the target position comprises a mapping device for defining the target position (= map information includes possible/future destination, see [0021-22 and 0025]).

Regarding claim 6, as recited in claim 1, **Knauerhase** further discloses the system, wherein the logic for determining the target position comprises an application specific integrated circuit (= software that performs the determination method, see [0014, 0021-22 and 0025]).

Regarding claim 9, as recited in claim 1, **Knauerhase** further discloses the system, wherein the transceiver is configured for receiving information representing the recent position of the wireless unit and for transmitting directions to the wireless unit, the directions including information directing a user of the wireless unit to the target position (= mobile device warns/informs the user of potential change in service, see [0027, 0031, 0033 and 0040]).

Regarding claim 10, **Knauerhase** discloses in a wireless network comprising access points and wireless clients (see [0024]), a method for directing a user of a wireless client to move the wireless client to a target position for improved communication (= service connectivity anticipation system/method, see [0003, 0017, 0022 and 0025]), comprising:

activating a location-determining mechanism for determining a most recent position of the wireless client (= determine location of mobile device via GPS and any known method, see [0021 and 0036]), wherein the activating step is triggered in one of two modes: automatic and fail-safe; wherein the automatic mode comprises constantly seeking a stronger reception (= updates the presence information use to periodically look ahead on service coverage/connectivity, see [0019-20, 0022, 0025 and 0031]);

wherein the fail-safe mode comprises activating the location-determining mechanism only when the reception strength falls below a predetermined threshold (= movement of device towards region where service may degrade, see [0020-21, 0027, 0033 and 0038]);

using a database comprising a history of communication quality at various positions (see [0033, 0036 and 0040]);

using a transceiver for providing information to the wireless client, the information comprising the target position and navigation directions to the target position(= mobile device warns/informs the user of potential change in service, see [0027, 0031, 0033, 0038, 0040] and Fig. 1); and

sending an audio message comprising instructions indicating to the user of the wireless unit how to get to the improved location (= mobile device warns/informs the user of potential change in service; and display device 530 may be or may include an auditory device, such as a speaker for providing auditory information, see [0021, 0027, 0031, 0033, 0040 and 0042]).

Knauerhase explicitly fails to disclose the claimed limitations: "using a wireless unit locator for determining, based on the history of communication received signal strength at the most recent and target positions, whether there exists the target position for improved communication between the wireless client and the access point ."

However, **Shoaib**, which is an analogous art, equivalently teaches: "using a wireless unit locator for determining, based on the history of communication received signal strength at the most recent and target positions, whether there exists the target

position for improved communication between the wireless client and the access point " (see [0071-73]).

Therefore, it would have been obvious at the time the invention was made for one of the ordinary skill in the art to have combined the teaching of Shoaib with Knauerhase for the benefit of achieving communication system that uses advance network information to determine handover operation thereby, providing a faster and seamless switching between heterogeneous networks.

Regarding claim 11, as recited in claim 10, **Knauerhase** further discloses the method, wherein the step of determining the most recent position of the wireless client further comprises receiving a global positioning system signal (=GPS, [0021-22 and 0025]).

Regarding claim 12, as recited in claim 10, **Knauerhase** further discloses the method, wherein the step of sending information to the user of the wireless client further comprises at least one step from among the steps of: providing a map illustrating a route to the target position; providing a text message comprising navigation instructions to the target position; and providing a video message comprising navigation instructions to the target position (= access service coverage map, see [0021-22, 0025 and 0039]).

Regarding claim 15, as recited in claim 10, **Knauerhase** further discloses the method, wherein the step of providing information comprises providing information relating to

target positions within a destination area provided by the wireless client (= map information includes possible/future destination, see [0021-22 and 0025]).

Regarding claim 16, as recited in claim 10, **Knauerhase** further discloses the method, wherein the information provided to the user of the wireless client is based on data relating to the wireless client's most recent position, direction and velocity (= speed/location, see [0025 and 0038-39]).

Regarding claim 17, as recited in claim 10, **Knauerhase** further discloses the method, wherein the step of determining the wireless client's most recent position comprises using triangulation (= GPS, see [0021]).

Regarding claim 19, as recited in claim 18, **Knauerhase** further discloses that the computer program product, further comprising computer program code for receiving a global positioning system signal (=GPS, [0021-22 and 0025]).

Regarding claim 20, as recited in claim 19, **Knauerhase** further discloses the computer program product, wherein the computer program code for providing directions further comprise at least one instruction from among the instructions: providing a map illustrating a route to the target position; providing a text message comprising navigation instructions to the target position; and providing a video message comprising navigation instructions to the target position (= access service coverage map, see [0021-22, 0025

Regarding claim 21, as recited in claim 18, **Knauerhase** further discloses that the computer program product, further comprising computer program code using information on the most recent location, direction, and velocity of the wireless client to project the target position for the wireless client where improved communication is likely(= speed/location, see [0025 and 0038-39]).

Regarding claim 22, **Knauerhase** discloses a wireless telecommunication unit (= mobile device, see [0024]), comprising:

a transmitter for transmitting to a user of the wireless unit directions to move the wireless unit to said target location (= mobile device warns/informs the user of potential change in service, see [0027, 0031, 0033, 0038 and 0040]);

a database for storing information relating to position and related data on wireless reception quality(see [0033, 0036 and 0039-40]), and

a user interface for presenting the directions; and a transceiver for receiving and transmitting the wireless signals (= mobile device warns/informs the user of potential change in service; and display device 530 may be or may include an auditory device, such as a speaker for providing auditory information, see [0021, 0027, 0031, 0033, 0040, 0042] and Fig. 1).

Knauerhase explicitly fails to disclose the claimed limitations: "processor logic for determining, based on historical data on received signal strength at a recent position

and a target position of the wireless telecommunication unit, the target position for improved reception for the wireless telecommunication unit based in part on information representing the recent position of the wireless unit, wherein changing the position of the wireless unit from the recent position to the target position is more likely to result in improved reception of wireless signals from a wireless access point ; and wherein the information stored based on historical data on received signal strength at the recent and target positions is enhanced by information on an environment of the recent and target positions .”

However, **Shoaib**, which is an analogous art, equivalently teaches: “processor logic for determining, based on historical data on received signal strength at a recent position and a target position of the wireless telecommunication unit, the target position for improved reception for the wireless telecommunication unit based in part on information representing the recent position of the wireless unit, wherein changing the position of the wireless unit from the recent position to the target position is more likely to result in improved reception of wireless signals from a wireless access point ; and wherein the information stored based on historical data on received signal strength at the recent and target positions is enhanced by information on an environment of the recent and target positions ”(see [0071-73]).

Therefore, it would have been obvious at the time the invention was made for one of the ordinary skill in the art to have combined the teaching of Shoaib with Knauerhase for the benefit of achieving communication system that uses advance

network information to determine handover operation thereby, providing a faster and seamless switching between heterogeneous networks.

Regarding claim 23, as recited in claim 22, **Knauerhase** discloses that the wireless telecommunication unit, further comprising a global positioning system (= GPS, see [0021]).

Regarding claim 24, as recited in claim 22, **Knauerhase** discloses the wireless telecommunication unit, wherein the processor logic comprises a programmable processor and program instructions (= software that performs the determination method, see [0014, 0021-22, 0025 and 0041]).

Regarding claim 25, as recited in claim 22, **Knauerhase** discloses the wireless telecommunication unit, wherein the processor logic comprises an application-specific integrated circuit (= software that performs the determination method, see [0014, 0021-22, 0025 and 0041]).

Regarding claim 26, as recited in claim 22, **Knauerhase** discloses that the wireless telecommunication unit, further comprising a database storing information relating to position and related data on wireless reception quality at the recent and target positions (= accessing service map that links communication service coverage with location, see [0017, 0022, 0025, 0027, 0031 and 0039]).

3. **Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knauerhase in view of Shoaib and further in view of Carter et. al., (U.S. 2004/0152362), (hereinafter, Carter).**

Regarding claim 5, as recited in claim 1, the combination of **Knauerhase** and **Shoaib** explicitly fails to disclose: the system, wherein database is dynamically updateable based on reception strength input received from a plurality of wireless units.

However, **Carter**, which is an analogous art, equivalently teaches: "system, wherein database is dynamically updateable based on reception strength input received from a plurality of wireless units" (= collection of data from authorized user who are in the network, as event occurs, see [0038, 0040 and 0054]).

Therefore, it would have been obvious at the time the invention was made for one of the ordinary skill in the art to have combined the teaching of Carter with Knauerhase and Shoaib for the benefit of providing a cheaper data collection process whereby data is collected by authorized users who are in the communication system, thereby eliminating dedicated and expensive data collection equipments from the process.

Regarding claim 14, as recited in claim 10, the combination of **Knauerhase** and **Shoaib** explicitly fails to disclose: "dynamically updating the database dynamically as new data on communication quality are determined".

However, **Carter**, which is an analogous art, equivalently teaches: "dynamically updating the database dynamically as new data on communication quality are

determined" (= collection of data from authorized user who are in the network, as event occurs, see [0038, 0040 and 0054]).

Therefore, it would have been obvious at the time the invention was made for one of the ordinary skill in the art to have combined the teaching of Carter with Knauerhase and Shoaib for the benefit of providing a cheaper data collection process whereby data is collected by authorized users who are in the communication system, thereby eliminating dedicated and expensive data collection equipments from the process.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwasi Karikari whose telephone number is 571-272-8566. The examiner can normally be reached on M-T (7am - 5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8566. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

<p>/Kwasi Karikari/ Patent Examiner (PSA): Art Unit 2617.</p>
